

1. A mechanical drive system for an accessory gearbox of a gas turbine engine, which engine has a low pressure drive shaft extending between and connected to a low pressure compressor and a low pressure turbine, the drive system comprising:
  - a tower shaft connected by a first gear arrangement to the low pressure drive shaft; and
  - a lay shaft connected by a second gear arrangement to the tower shaft, and connected to the accessory gearbox.
2. The mechanical drive system of claim 1, wherein the first gear arrangement includes a first gear and a second gear engaged with one another, wherein the first gear is attached to the low pressure shaft and the second gear is attached to the tower shaft.
3. The mechanical drive system of claim 2, wherein the first gear and the second gear are mating bevel gears.
4. The mechanical drive system of claim 3, wherein the second gear arrangement includes a third gear and a fourth gear engaged with one another, wherein the third gear is attached to the tower shaft and the fourth gear is attached to the lay shaft.
5. The mechanical drive system of claim 4, wherein the third gear and the fourth gear are mating bevel gears.
6. The mechanical drive system of claim 1, wherein the first gear arrangement includes a first gear, a second gear, a third gear, a fourth gear, and an intermediate shaft;
  - wherein the first gear is attached to the low pressure drive shaft, the second gear and the third gears are attached to the intermediate shaft, and the fourth gear is attached to the tower shaft;
  - wherein the first gear is engaged with the second gear, and the third gear is engaged with the fourth gear.

7. The mechanical drive system of claim 6, wherein the first gear and the second gear are mating spur gears.
8. The mechanical drive system of claim 6, wherein the third gear and the fourth gear are mating bevel gears.
9. The mechanical drive system of claim 6, wherein the second gear arrangement includes a fifth gear and a sixth gear engaged with one another, wherein the fifth gear is attached to the tower shaft and the sixth gear is attached to the lay shaft.
10. The mechanical drive system of claim 9, wherein the fifth gear and the sixth gear are mating bevel gears.
11. A gas turbine engine, comprising:
  - a high pressure drive shaft connected to and extending between a high pressure compressor and a high pressure turbine;
  - a low pressure drive shaft connected to and extending between a low pressure compressor and a low pressure turbine;
  - wherein the high pressure drive shaft and the low pressure drive shaft rotate about an axially extending engine centerline;
  - an accessory gear box;
  - a tower shaft connected by a first gear arrangement to the low pressure drive shaft; and
  - a lay shaft connected by a second gear arrangement to the tower shaft, and connected to the accessory gearbox.
12. The gas turbine engine of claim 11, wherein the first gear arrangement includes a first gear and a second gear engaged with one another, wherein the first gear is attached to the low pressure shaft and the second gear is attached to the tower shaft.

13. The gas turbine engine of claim 12, wherein the second gear arrangement includes a third gear and a fourth gear engaged with one another, wherein the third gear is attached to the tower shaft and the fourth gear is attached to the lay shaft.

14. The mechanical drive system of claim 11, wherein the first gear arrangement includes a first gear, a second gear, a third gear, a fourth gear, and an intermediate shaft;

wherein the first gear is attached to the low pressure drive shaft, the second gear and the third gears are attached to the intermediate shaft, and the fourth gear is attached to the tower shaft;

wherein the first gear is engaged with the second gear, and the third gear is engaged with the fourth gear.

15. The gas turbine engine of claim 14, wherein the second gear arrangement includes a fifth gear and a sixth gear engaged with one another, wherein the fifth gear is attached to the tower shaft and the sixth gear is attached to the lay shaft.